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मानक

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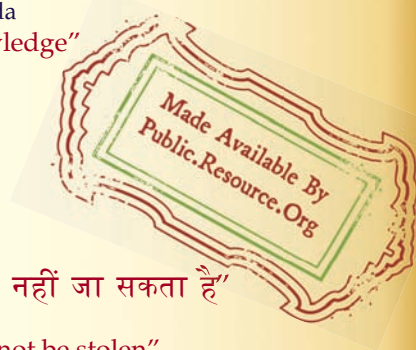
IS 9462 (1980): Humidifier, Nebulizing, Ventury Type [MHD
13: Veterinary Hospital Planning and Surgical Instruments]



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“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

(Reaffirmed 1998)

SPECIFICATION FOR HUMIDIFIER, NEBULIZING, VENTURY TYPE

1. Scope — Specifies the general and performance requirements for nebulizing humidifier used for oxygen/inhalation therapy purposes.

2. Terminology — For the purpose of this standard, the following definition shall apply.

2.1 Nebulizing Humidifier — A device designed to add water to inspired gas in the form of aerosol with particle size less than 15 microns.

3. Shape — Typical diagrams showing nebulizing humidifier, ball type and plate type with nomenclature of its different components is given in Fig. 1 and 2.

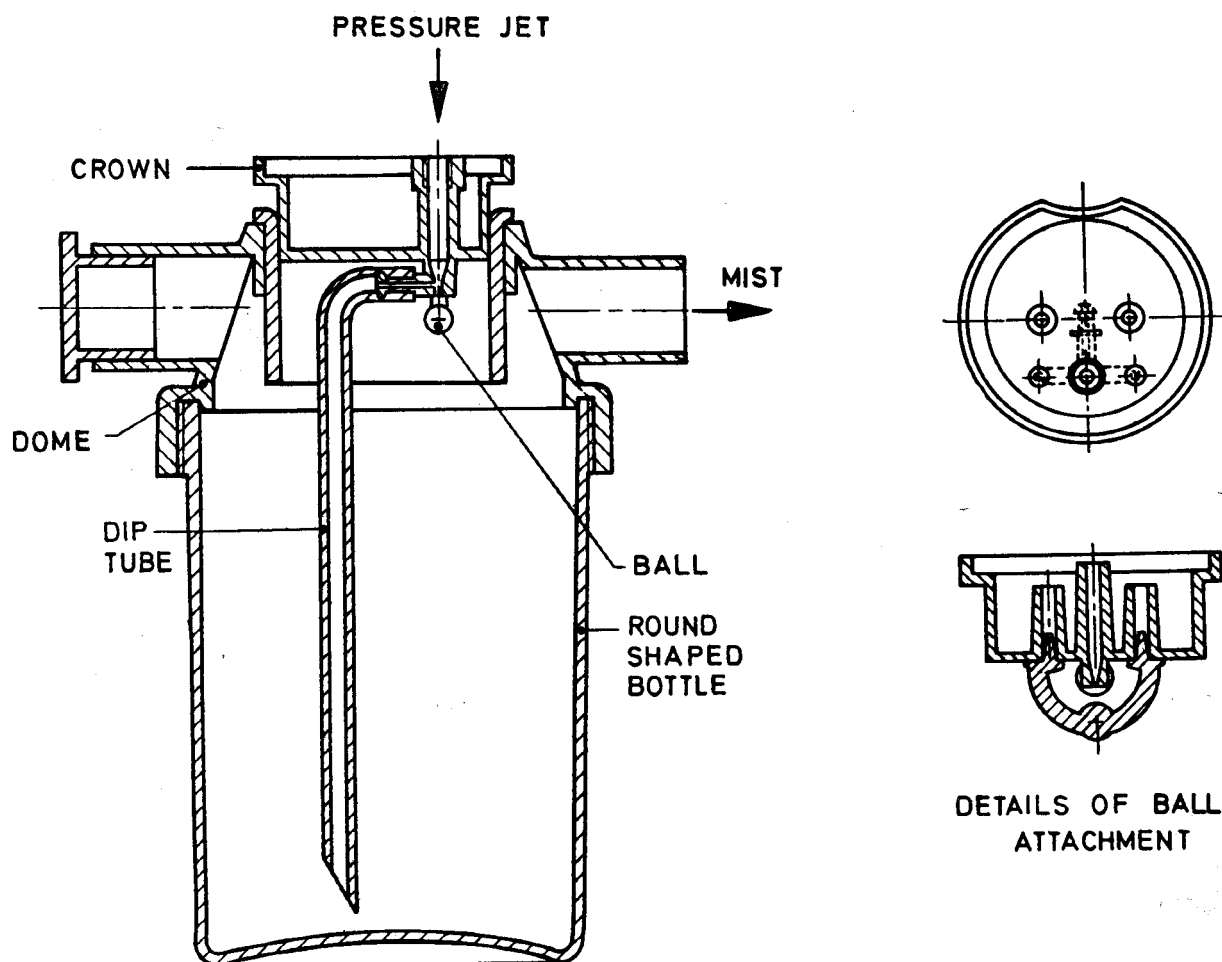


FIG. 1 HUMIDIFIER NEBULIZING, VENTURY, BALL TYPE

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Price Rs. 10.00

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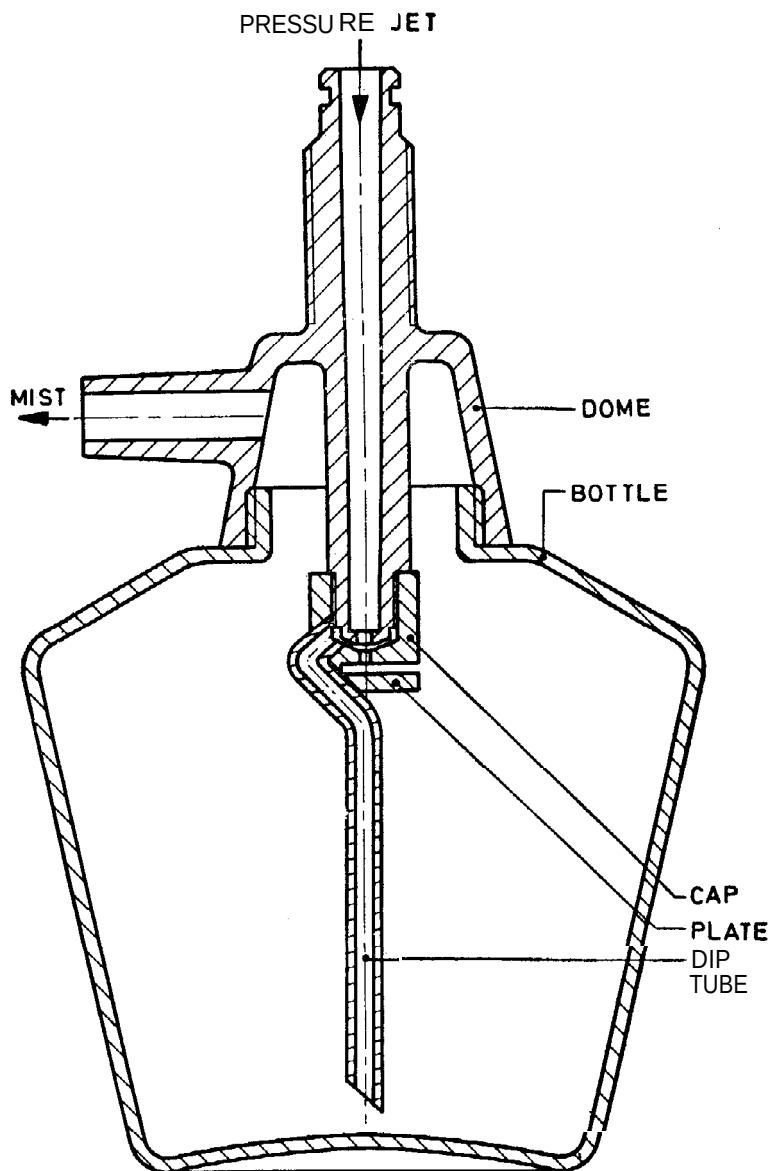


FIG. 2 HUMIDIFIER NEBULIZING, VENTURY, PLATE TYPE

4. Materials -The different components of the humidifier shall be made of materials as given below.

4.1 Container — It shall be made from suitable transparent, sturdy and non-breakable plastics, permitting visibility of the liquid level. The plastics material shall withstand the chemical sterilization when kept in the following chemicals for 24 hours:

Glutar Aldehyde, or
Pure Hexadrine, or
Cetrimide
or shall withstand ethylene oxide gas sterilization.

4.2 Dome and Crown -These shall be made from suitable non-breakable and sturdy plastics material, or from suitable non-corrosive metals.

4.3 Plastics Components -The plastics should be non-reactive, non-toxic, free from discoloration and suitable for medical purposes. The plastics material shall withstand the chemical sterilization as given in 4.1.

4.4 Dip and Jet Tubing — It shall be a sturdy tubing with a uniform bore made from plastics or other non-corrosive material.

4.4.1 *Stilette* — It shall be a wire of stainless steel or brass corresponding to inner calibre of the jet and having 10 mm length more than the jet length for cleaning the clogged jet.

4.5 Metallic Components — These shall be made from stainless steel conforming to IS : 5522-1969 'Specification for stainless steel sheets, coils and circles for utensils and hospitalware' or brass chromium plated.

4.6 Breathing Tube — It shall be made from suitable rubber or plastics and shall be corrugated and non-kinkable. It shall have a minimum 25 mm inside diameter and 1 m length.

4.6.1 Patient-end of the tubing shall conform to IS : 5413-1969 'Specification for conical fittings for to-and-fro carbon dioxide absorber (water type) for use with anaesthetic apparatus' and shall fit to a face mask or polymask or any other type of attachment which may be in use at that time.

4.6.2 The bottle end of the breathing tube shall be fitted with a water trap having a tap to let the water out.

5. DESCRIPTION OF THE APPARATUS

5.1 The apparatus shall consist of a round shape container with nominal capacity of 400 ml and screwed-cap head having vertical jet capillary system with 'baffle collar' for arresting large size aerosol delivery.

Note-The basic principle used to obtain fine micron size particles in this device is a jet capillary system and a bail obstruction, the liquid in the container being drawn up by capillary action as created by the use of high pressure jet source of gas (air or oxygen) which finally hits the ball/plate to break into fine, micron size particles. This creates a large volume of mist.

5.2 The humidifier shall be provided with suitable arrangements for mounting on the wall or bedside rail or on a table top.

5.3 The humidifier shall have a flow-meter to measure the rate of flow of gas in litres per minute and shall be of rating as 2-15 litres per minute.

5.4 An additional inlet may be provided in the crown, so as to add any other medication in the aerosol.

6. WORKMANSHIP AND FINISH

6.1 All the components shall be easily detachable and capable of withstanding chemical sterilization. They shall form leak-proof joints on re-assembly.

6.2 The dimensions for various components shall be suitable for portability and uniform nebulization of maximum 15 micron size particles for long durations with easily refilling arrangement. The capacity of the apparatus shall be 44 mg per litre, at a relative humidity of 50-55 percent.

6.3 The humidifier shall be capable of working on oxygen or air at a pressure of 403 kPa (1 Pascal = 1 N/m²).

6.4 All the components shall have a smooth finish and shall be free from any burrs, sharp edges or other imperfections affecting the handling or performance of the equipment.

7. Test — The performance of nebulizer shall be checked by throwing the aerosol against a smooth transparent glass surface in a turbulent air free room at a maximum designed flow rate (1-15 l/min), held at a distance of 150 mm from the aerosol outlet. There shall be no deposit or condensation on the surface.

8. Instructions for use—An instruction manual shall be provided with each humidifier indicating the directions for use along with the details of its applications and other information which the manufacturer may consider to be helpful to the user.

9. Marking — Each humidifier shall be legibly and permanently marked with the following:

- a) Name or registered trade-mark of the manufacturer;
- b) Capacity of the bottle in ml; and
- c) The words ' Disposable ' on those components which are of disposable type.

9.1 *ISI Certification Marking* — Details available with the Indian Standards Institution.

10. Packing -The packing shall be done as agreed to between the purchaser and the supplier, or in accordance with the best prevailing trade practices.